



Lurifax vitreus Warén & Bouchet, 2001 (Gastropoda, Orbitestellidae), first report from Western Mediterranean Sea

Carlo Smriglio and Paolo Mariottini

KEY WORDS: *Lurifax vitreus*, Orbitestellidae, Western Mediterranean Sea, deep-sea, white corals.

ABSTRACT

The present paper records a noteworthy gastropod species, *Lurifax vitreus* Warén & Bouchet, 2001, from the Western Mediterranean Sea. This species belongs to the family Orbitestellidae Iredale, 1917 and has been recently described by WARÉN & BOUCHET (2001) on a large amount of individuals collected from hydrothermal vents of the Middle Atlantic Ridge. An empty shell of *L. vitreus* has been sorted out from material collected on a deep-sea coral bank under investigation located in the Central Tyrrhenian Sea, offshore Latium. A list of mollusc species found associated with *L. vitreus* is given and implication about the occurrence within the Mediterranean basin of this genus, which in Atlantic and Pacific oceans is strictly associated to hydrothermal vents and cold seeps, is also discussed.

RIASSUNTO

In questa nota viene segnalato per la prima volta per il Mar Mediterraneo un interessante gasteropode Orbitestellidae, *Lurifax vitreus* Warén & Bouchet, 2001. Il genere e la specie sono state descritte recentemente da WARÉN & BOUCHET (2001), su un cospicuo numero di esemplari. Nonostante la conchiglia mostri spira alta e taglia grande, l'analisi delle parti molli e dalla radula, indistinguibile da quella presente nei generi *Orbitestella* Iredale, 1917 e *Microdiscula* Thiele, 1912, ha decisamente spinto i due Autori nell'inquadrare *Lurifax* all'interno della famiglia Orbitestellidae Iredale, 1917. Questo genere è strettamente legato alle sorgenti idrotermali e alle "seeps" di acque profonde. La sua distribuzione è molto vasta, essendo stato ritrovato nelle sorgenti termali della dorsale oceanica atlantica (Menez Gwen, 37°50'N-31°31'W; Lucky Strike, 37°17'N-32°17'W) e nelle "seeps" fredde localizzate al largo della Nuova Zelanda (Ritchie Ridge, 39°26'S-170°24'E). La batimetria di ritrovamento è compresa tra gli 850 e 1800 m. Nel presente lavoro si segnala il ritrovamento di una conchiglia priva di parti molli di *L. vitreus*, identificata durante l'analisi di materiale proveniente dal Mar Tirreno Centrale, coste laziali (41°51'N-11°28'E). Il campione è stato dragato su fondali ospitanti comunità CB e VB [sensu PÉRÈS & PICARD (1964), 450-600 m] in corso di studio (SMRIGLIO & MARIOTTINI, 1999, 2000). La conchiglia dell'esemplare segnalato è in ottime condizioni di freschezza, così come quella di un altro esemplare, raccolto sempre al largo delle coste laziali [Terracina (LT), 600 m] e già raffigurato come *Antimargarita* sp. da ARDOVINI & COSSIGNANI (1999: p. 33, fig. 017). Si fornisce l'elenco delle specie trovate associate a *L. vitreus*, da cui si evince che l'esemplare potrebbe essere associato alla comunità CB presente in questa area del Mar Tirreno Centrale. La presenza inaspettata di questo genere nel bacino mediterraneo viene discussa.

C. SMRIGLIO Via di Valle Aurelia 134, 00167 Roma, Italy. E-mail: csmriglio@tiscalinet.it

P. MARIOTTINI Dipartimento di Biologia, Università degli Studi Roma Tre, Viale Marconi 446, 00146 Roma, Italy.

Corresponding author: Paolo Mariottini, Dipartimento di Biologia, Università degli Studi Roma Tre, Viale Marconi 446, 00146 Roma, Italy. Phone: 39 6 55176359. Fax: 39 6 55176321. E-mail: mariotpa@bio.uniroma3.it

INTRODUCTION

Lurifax vitreus Warén & Bouchet, 2001, type species of the genus *Lurifax* Warén & Bouchet, 2001, has been recently described on a large amount of specimens (492) and allocated within the family Orbitestellidae Iredale, 1917. In spite of its tall-spined, large shell and *Cyclostremiscus*-shape looking, this taxon has been assigned to this family on the basis of soft parts and radula examination, the latter being indistinguishable from that of *Orbitestella* Iredale, 1917 and *Microdiscula* Thiele, 1912 (WARÉN & BOUCHET, 2001). This genus belongs to the hydrothermal vent and (sulphide-methane?) cold seep fauna and seems to be epifaunal, (type material of *L. vitreus* has been collected on mussels). The distribution of this species is wide, ranging from the hydrothermal vents of the Middle Atlantic Ridge (MAR, Menez Gwen, 37°50'N-31°31'W; Lucky Strike, 37°17'N-32°17'W) to the cold seeps off New Zealand (Ritchie Ridge, 39°26'S-170°24'E), its collecting depth is from 850 to 1800 m. The present report points out the occurrence of this interesting gastropod species, with the record of one empty shell, from a bathyal faunal assemblage located in the Central Tyrrhenian Sea, off-shore Latium coast (Italy, Western Mediter-

anean Sea), and currently under investigation (SMRIGLIO & MARIOTTINI, 1999, 2000). The unexpected presence within the Mediterranean basin of this genus, which in Atlantic and Pacific oceans is strictly associated to hydrothermal vents and cold seeps, is also discussed.

SYSTEMATICS

Family Orbitestellidae Iredale, 1917

Genus *Lurifax* Warén and Bouchet, 2001

Type species: *Lurifax vitreus* Warén and Bouchet, 2001

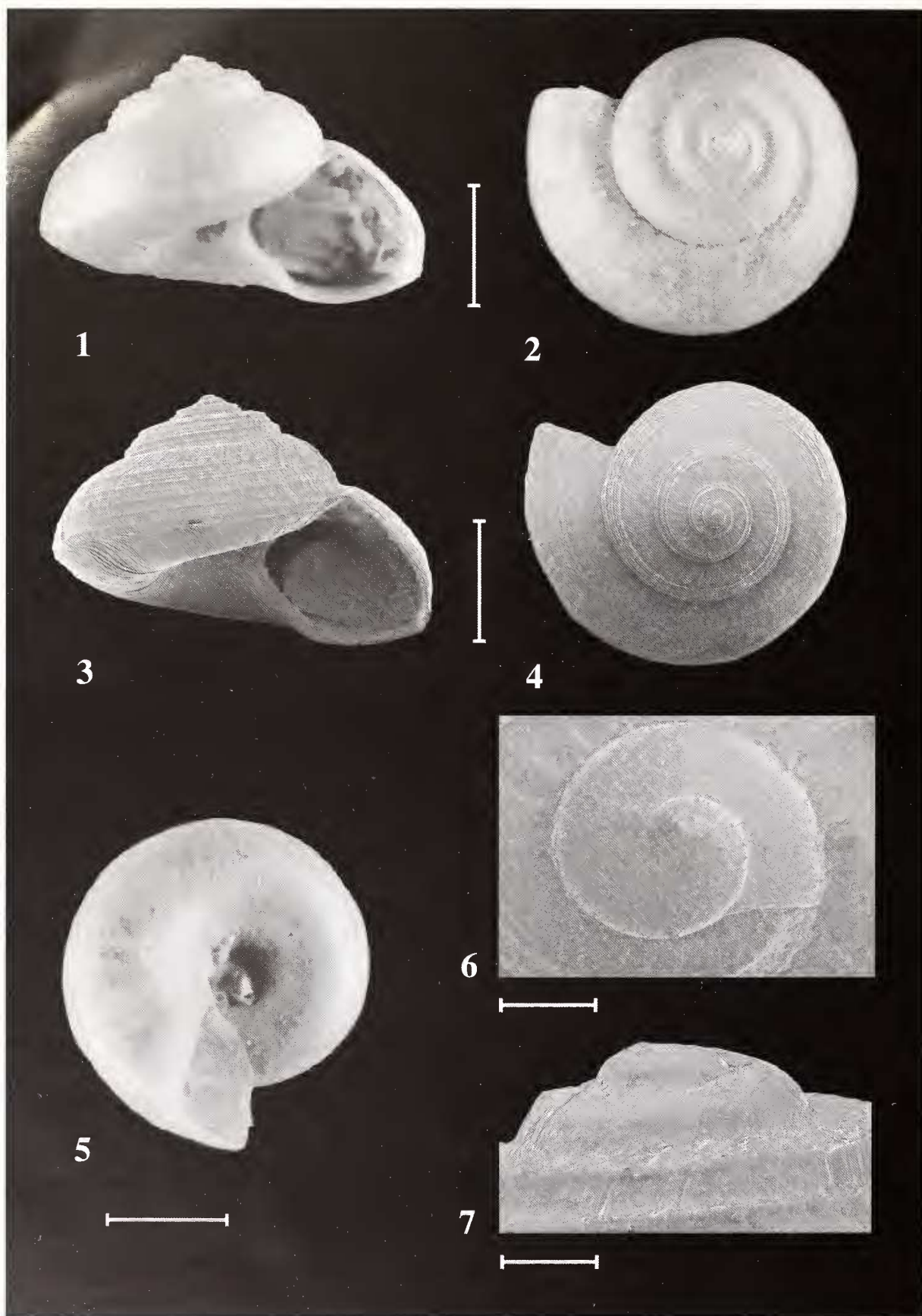
MATERIAL EXAMINED

One specimen from Central Tyrrhenian Sea (41°51'N 11°28'E), off coast of Latium, Italy, Mediterranean Sea, depth 450-600 m, CS collection. Eleven specimens from Middle Atlantic Ridge, Lucky Strike vent field (37°17'N-32°17'W), depth 1620-1720 m, SMNH 41640.

ABBREVIATIONS AND ACRONYMS

CS: Carlo Smriglio, Rome, Italy;

MAR: Middle Atlantic Ridge;



Figs. 1-7 : *Lurifax vitreus* Warén & Bouchet, 2001. 2.0 x 3.3 mm. 1-5, apertural, apical and basal views of the shell. 6-7, protoconch. Central Tyrrhenian Sea, off Latium coast (450-600 m), 41°51'N-11°28'E. Scale bars, shell: 1 mm; protoconch: 100 µm. Photos 1, 2 and 5 under stereomicroscope; photos 3, 4, 6 and 7 under SEM.



LACM: Natural History Museum of Los Angeles County, Los Angeles, USA;

ZMB: Zoological Museum (Laboratory of Malacology), University of Bologna ("Museo di Zoologia, Università di Bologna"), Bologna, Italy;

SMNH: Swedish Museum of Natural History ("Naturhistoriska Riksmuseum"), Stockholm, Sweden.

DISCUSSION

Lurifax vitreus has already been recorded offshore Latium coast by ARDOVINI & COSSIGNANI (1999: p. 33, fig. 017), as *Antimargarita* sp., with one specimen (2 mm, in diameter?). A second specimen of the new taxon, herein reported (Figs. 1-7), has been collected on a bathyal bottom of the same geographical area (41°51'N-11°28'E), which hosts deep-sea coral bank and muddy-bathyal communities [CB and VB communities, *sensu* PÉRÈS & PICARD (1964)], at a depth of 450-600 m. This faunal assemblages are currently under investigation (SMRIGLIO & MARIOTTINI, 1999, 2000). We think noteworthy to list the identified species occurring together with *L. vitreus* in the same dredged material:

Veleropilina reticulata (Seguenza, 1876),
Propilidium exiguum (Thompson, 1844),
Copulabyssia corrugata (Jeffreys, 1883),
Fissurisepta granulosa Jeffreys, 1883,
Puncturella noachina (Linné, 1771),
Anatoma crispata Fleming, 1828,
Putzeysia wiseri (Calcara, 1842),
Rugulina monterosatoi (Van Aartsen & Bogi, 1986),
Moelleriopsis messanensis (Seguenza, 1876),
Alvania cimicoides (Forbes, 1844),
Alvania subsoluta (Aradas, 1847),
Benthonella tenella (Jeffreys, 1869),
Cyclostremiscus dariae Liuzzi & Stolfi Zucchi, 1979,
Xylodiscula boucheti Warén, Carrozza & Rocchini, 1992,
Laeviphris verduini Van Aartsen, Bogi & Giusti, 1989,
Atlanta peronii Lesueur, 1817,
Trophon echinatus (Kiener, 1840),
Nassarius lima (Dillwyn, 1871),
Amphissa acutocostata (Philippi, 1844),
Taranis moerchi (Malm, 1863),
Adeuomphalus ammoniformis Seguenza G., 1876,
Eulimella ventricosa (Forbes, 1844),
Yoldiella messanensis (Jeffreys, 1870 ex Seguenza G. ms.),
Spondylus gussonii Costa O. G., 1829,
Myrtea spinifera (Montagu, 1803),
Abra longicallus (Scacchi, 1834),
Kelliella abyssicola Forbes, 1844.

Albeit we are dealing with two Mediterranean findings of empty shells of *L. vitreus*, in both cases the specimens look fresh (ARDOVINI & COSSIGNANI, 1999: p. 33, fig. 017). According to the accompanying mollusc species, *L. vitreus* could be considered associated to the CB communities present in the Central Tyrrhenian Sea. The presence within the Mediterranean basin of this genus, which is associated to hydrothermal vents and cold seeps in Atlantic and Pacific oceans, as mentioned above, is real-

ly surprising. WARÉN & BOUCHET (2001) estimated that 95-98% of the mollusk hydrothermal vent and seep fauna is endemic at species level, number slightly higher than the one proposed for the vent fauna in general (93%) by TUNNICLIFFE et al. (1996). They also mentioned that indeed some species are regularly occurring but not endemic, for example *Protolira thorvaldsoni* Warén, 1996 and *Alvania stenolopha* Bouchet & Warén, 1993, which are present at the MAR vents, but they could be found in the deep-water outside as well. *L. vitreus* was considered endemic from MAR and not suspected to occur also outside the vent and seep environment. We like to recall, that this species has been found in samplings which showed mainly the presence of mussels, but also associated with different invertebrate: polychaetes, Hydrozoa, sponges. It seems that the trophic need of *L. vitreus* could be also satisfied by different environment, like the deep-sea coral communities. With this record we enlarge the habitat and the distribution of this interesting gastropod, which should be added to Mediterranean list of recent mollusk species.

ACKNOWLEDGEMENTS

We would like to express our deep gratitude to Dr Anders Warén (SMNH, Stockholm, Sweden) for kindly forwarding material of *L. vitreus* and references related to. Sincere thanks are due to Dr Bruno Sabelli (ZMB, Bologna, Italy), Dr James H. McLean (LACM, Los Angeles, USA) and Dr Marco Oliverio (Università di Roma "La Sapienza", Rome, Italy) for their critical comments and advice on the present paper. We are grateful to Dr Antonio Bonfitto (ZMB, Bologna, Italy) and Dr Marco Taviani (Istituto di Geologia Marina del C.N.R., Bologna, Italy) for the examination of material kept in the MZB collection and sending of references related to. We are indebted to an anonymous referee for useful suggestions and corrections to the manuscript.

REFERENCES

- ARDOVINI R. & COSSIGNANI T., 1999. *Atlante delle conchiglie di profondità del Mediterraneo*. L'Informatore Piceno Ed., Ancona, 111 pp.
- PÉRÈS J. M. & PICARD J., 1964. Nouveau Manuel de Bionomie Benthique de la Mer Méditerranée. *Recueil des Travaux de la Station Marine d'Endoume*, 31 (47):1-137.
- SMRIGLIO C. & MARIOTTINI P., 1999. Molluschi del Mar Tirreno Centrale. Contributo XII. Segnalazione di due rari Epitonidae batiali per le coste laziali (Gastropoda, Ptenoglossa). *Bollettino Malacologico*, Milano, 34 (1998) (9-12):137-140.
- SMRIGLIO C. & MARIOTTINI P., 2000. *Onoba oliverioi* n. sp. (Prosobranchia, Rissoiidae), a new gastropod from the Mediterranean. *Iberus*, Oviedo, 18 (1):15-19.
- TUNNICLIFFE V. & FOWLER C. M. R., 1996. Influence of sea-floor spreading on the global vent fauna. *Nature*, London, 379:531-533.
- WARÉN A. & BOUCHET P., 2001. Gastropoda and Monoplacophora from hydrothermal vents and seeps; new taxa and records. *The Veliger*, Berkeley, 44 (2):116-231.